

The Department Of Energy Technical Standards Program



Program Tutorial

Instructional Goals

- Provide an understanding of the Department Of Energy (DOE) Technical Standards Program (TSP)
- Provide an overview of the DOE system of documents
- Facilitate involvement in developing, reviewing, and/or applying technical standards in support of the DOE's missions and programs

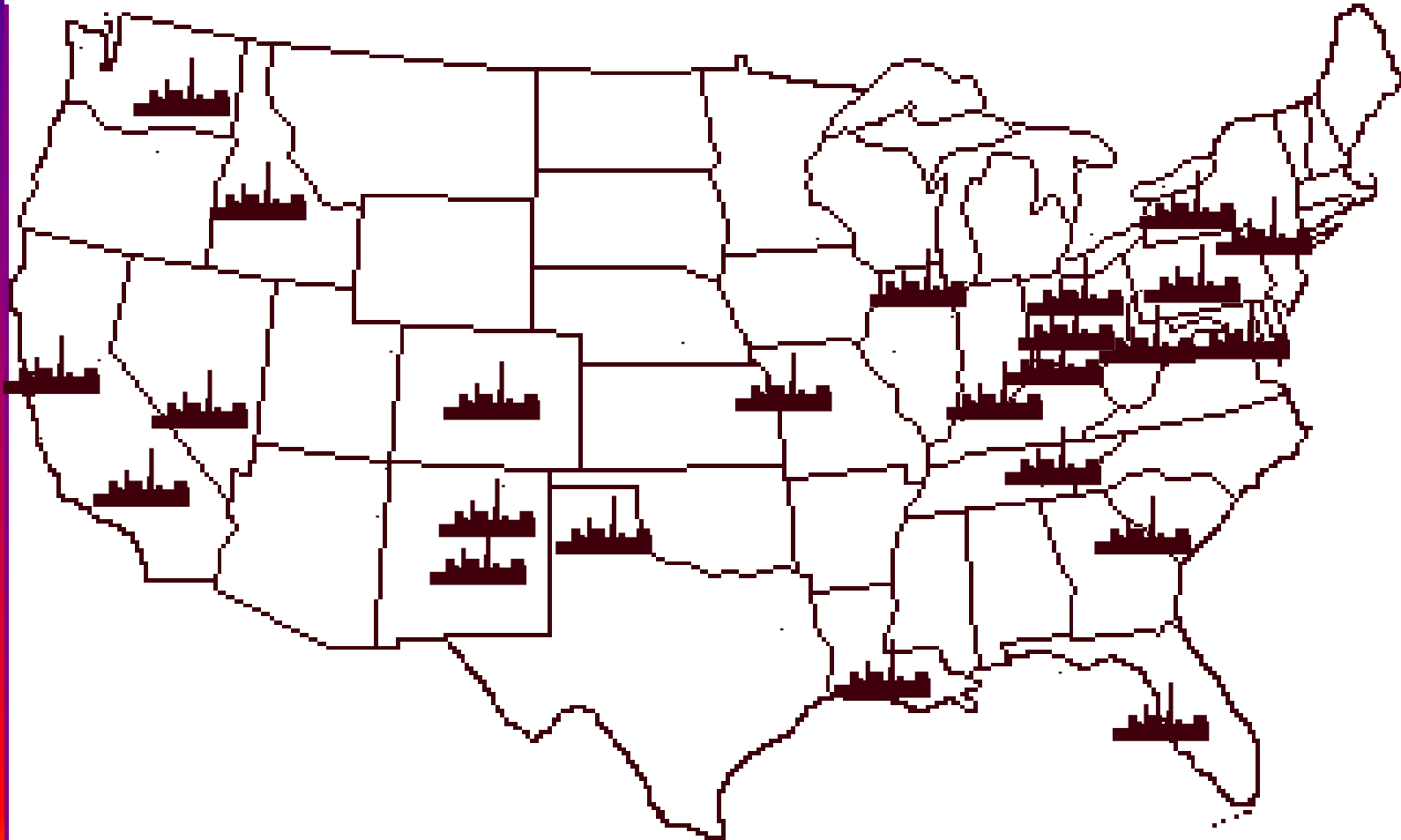
Why This Tutorial?

- **To promote awareness of the DOE Technical Standards Program, including...**
 - ☞ the role of technical standards in the DOE document hierarchy
 - ☞ use of voluntary consensus standards (non-Government standards)
 - ☞ resources provided by the Technical Standards Program Office (TSPO)

Selected Topics To Be Covered During This Tutorial

- What are DOE Technical Standards?
- Why have a Technical Standards Program?
- How does the the Technical Standards Program work?
- What does the Technical Standards Program do?
 - ➡ Policy and Program Development
 - ➡ Technical Services
 - ➡ Communications and Outreach

Historically, DOE Sites Independently Developed Practices and Procedures



The Drive Toward Standardization Has Gathered Momentum Since 1949

**Federal Property
and
Administrative
Services Act**

1949

**(established
Federal
Standardization
Program)**

**Federal Energy
Administration
Act**

1974/1977

**Section 32: "Use
of Commercial
Standards"**

OMB Circular A-119

1/17/80

Rev 10/27/82

Rev 10/20/93

Rev 02/19/98

**(set policies for
working with bodies
that produce
voluntary or non-
Government
standards)**

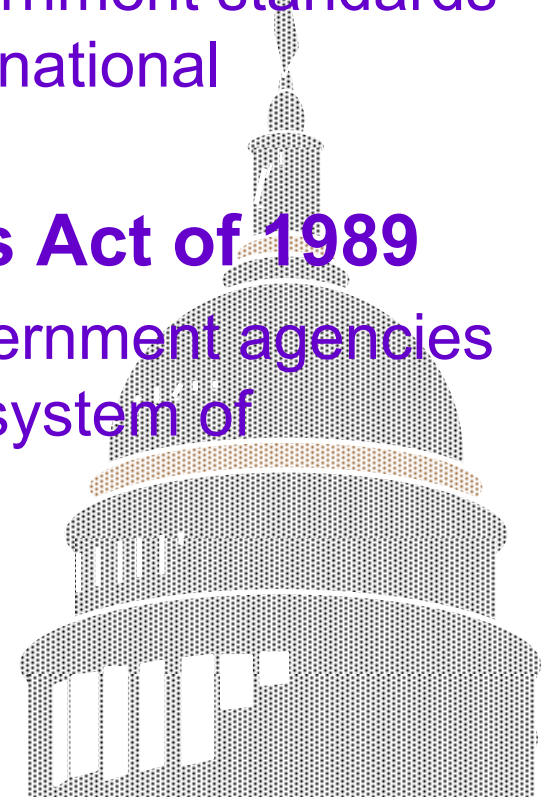
Other Standards-Related Milestones

- **Trade Act of 1979**

- ➡ Established the use of non-Government standards as national policy (including international standards)

- **International Competitiveness Act of 1989**

- ➡ Established policy that U.S. Government agencies would adopt and use the metric system of international measurements



Other Standards-Related Milestones

- **Executive Order 12770, July 25, 1991**
 - ☞ Directed Federal agencies to implement the metric system
- **National Technology Transfer and Advancement Act of 1995**
 - ☞ Requires Federal agencies to use voluntary consensus standards to carry out policy objectives or activities



DOE Has A Long History With Document Standardization Programs

1960s

Nuclear Standards Program supporting Liquid Metal Fast Breeder (LMFBR) program.

1970s

Nuclear Standards policy issued (NE 5820) for broader coverage of DOE nuclear programs. DOE established in 1977.

1980s

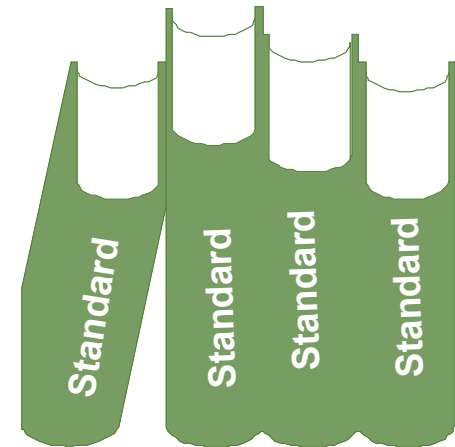
DOE Order 1300.2 issued to cover DOE nuclear and non-nuclear programs.

1990s

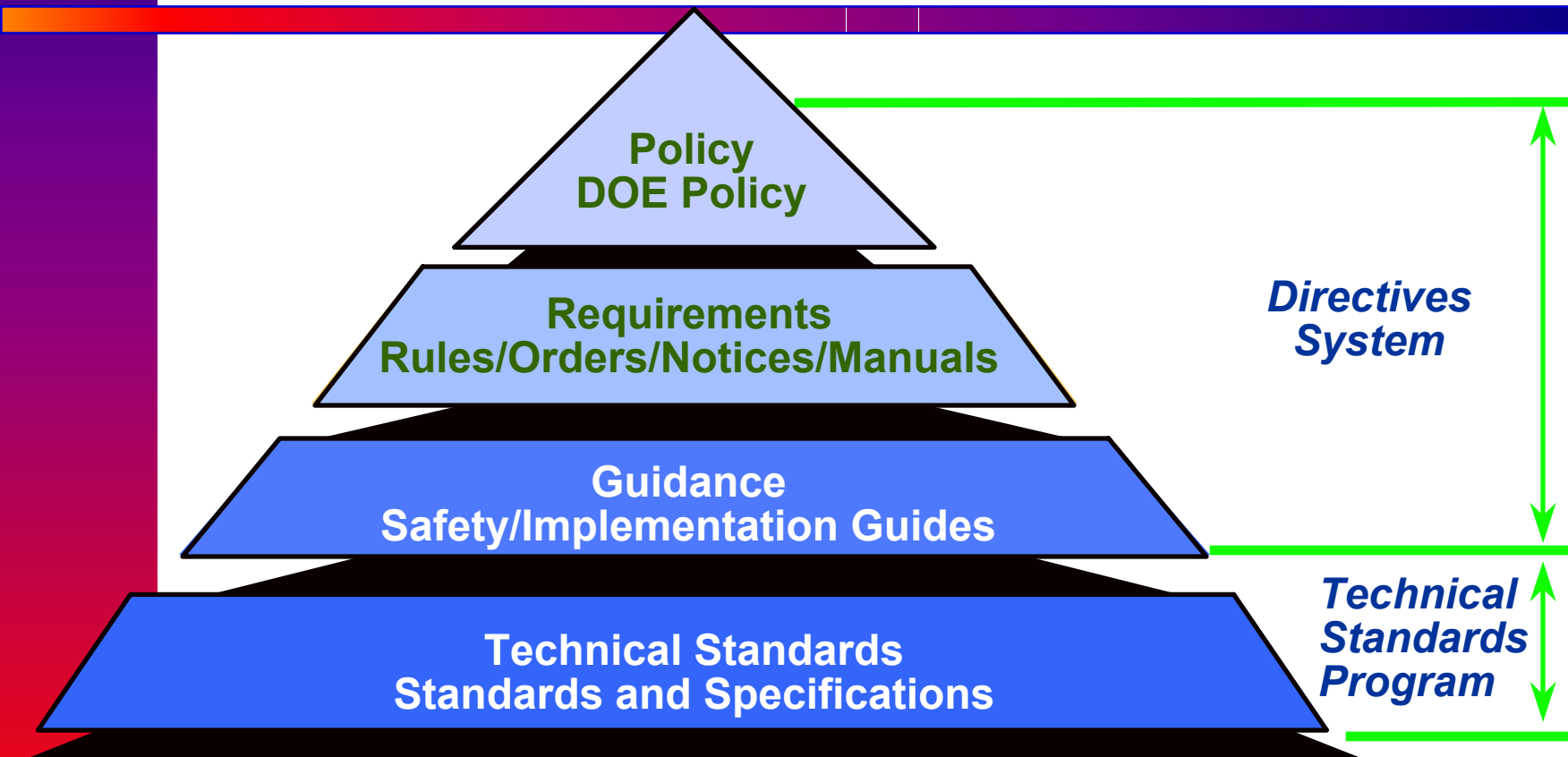
DOE Order 1300.2A, 05/19/92
DOE Order 252.1, 11/19/99

DOE Technical Standards Program

The Department is continuing its transition from expert-based operations to standards-based operations.

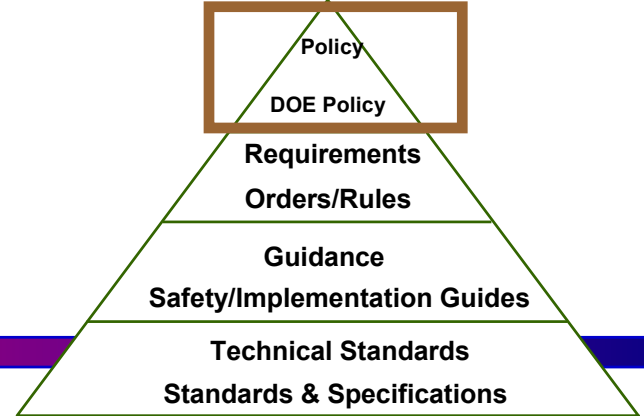


DOE's Tiered, Structured System for Definition of Requirements



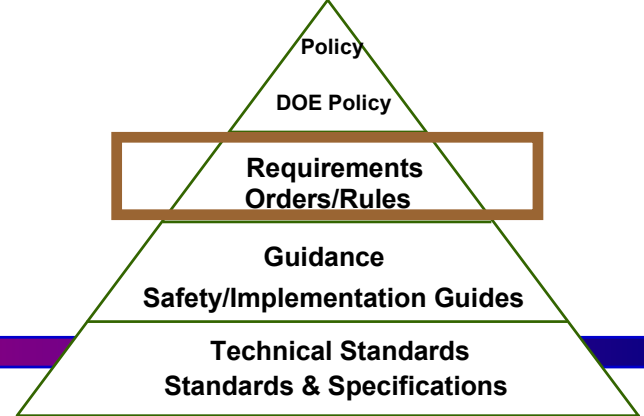
The hierarchy of directives and related documents is viewed as a family of standards.

Policy



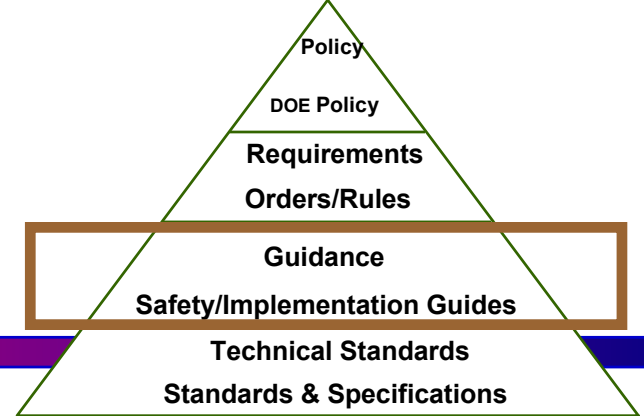
- Policy documents describe the philosophy and fundamental values of the Department--the "why we do it" statements.
- All requirements and guidance flow from, and must be consistent with, policy.

Requirements



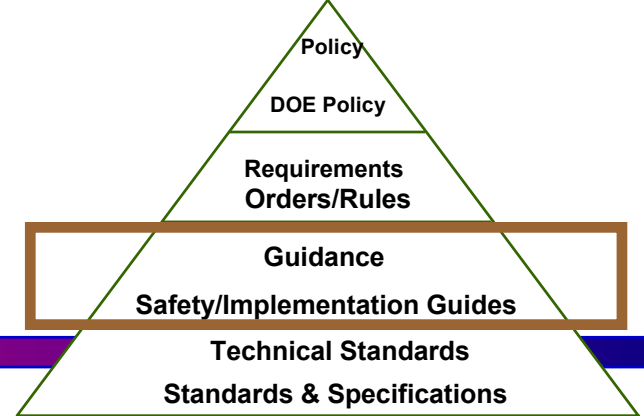
- Requirements documents, such as orders and rules, describe “what must be done.”
- These documents set expectations that must be met to ensure safe and reliable facility operations and conduct procurement.
- They do not provide information on how to do work.

Guidance



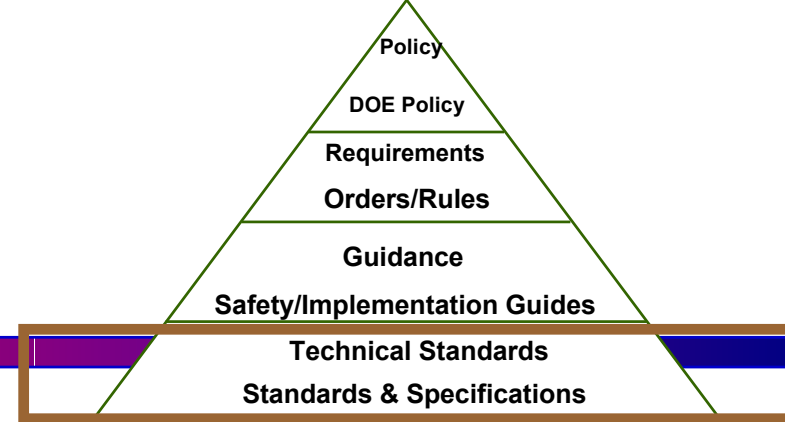
- **Guidance documents (safety and implementation guides) provide general information and methodologies that DOE finds acceptable to meet the Department's requirements.**
- **In practice, the safety and implementation guides provide a link between the requirements and technical standards.**

Guidance (cont.)



- **Issued to provide guidance...**
 - ☞ on acceptable methods for implementing rules and orders
 - ☞ in delineating DOE's techniques for evaluating problems and events
- **May reference technical standards**
- **Not a substitute for rules or orders**
- **Provide a bridge between requirements and technical standards**

Technical Standards



- Technical standards provide specific methods and techniques on "how to" implement the Department's requirements.
- Technical standards are the foundation upon which the DOE documents hierarchy is based.
- Currently, DOE uses “category-based” reporting for procurement per Office of Management and Budget (OMB) Circular A-119.

What Are Technical Standards?

- **Definitions consistent with Public Law (PL) 104-113 and OMB Circular A-119**
- **Uses**
- **Methods and techniques**
- **Not mandatory unless compliance is required in a policy or requirement document and cited by contract**

Technical Standards Are Needed When...

- There are multiple applications of the process
- The product or technology is mature and stable
- The process is repetitive and lends itself to standardization (e.g., maintenance)
- Application of the standard will result in improved economy of scale
- The standard provides information on how to implement Departmental requirements
- The standard contributes to the uniformity of facility operations

Sources of Technical Standards

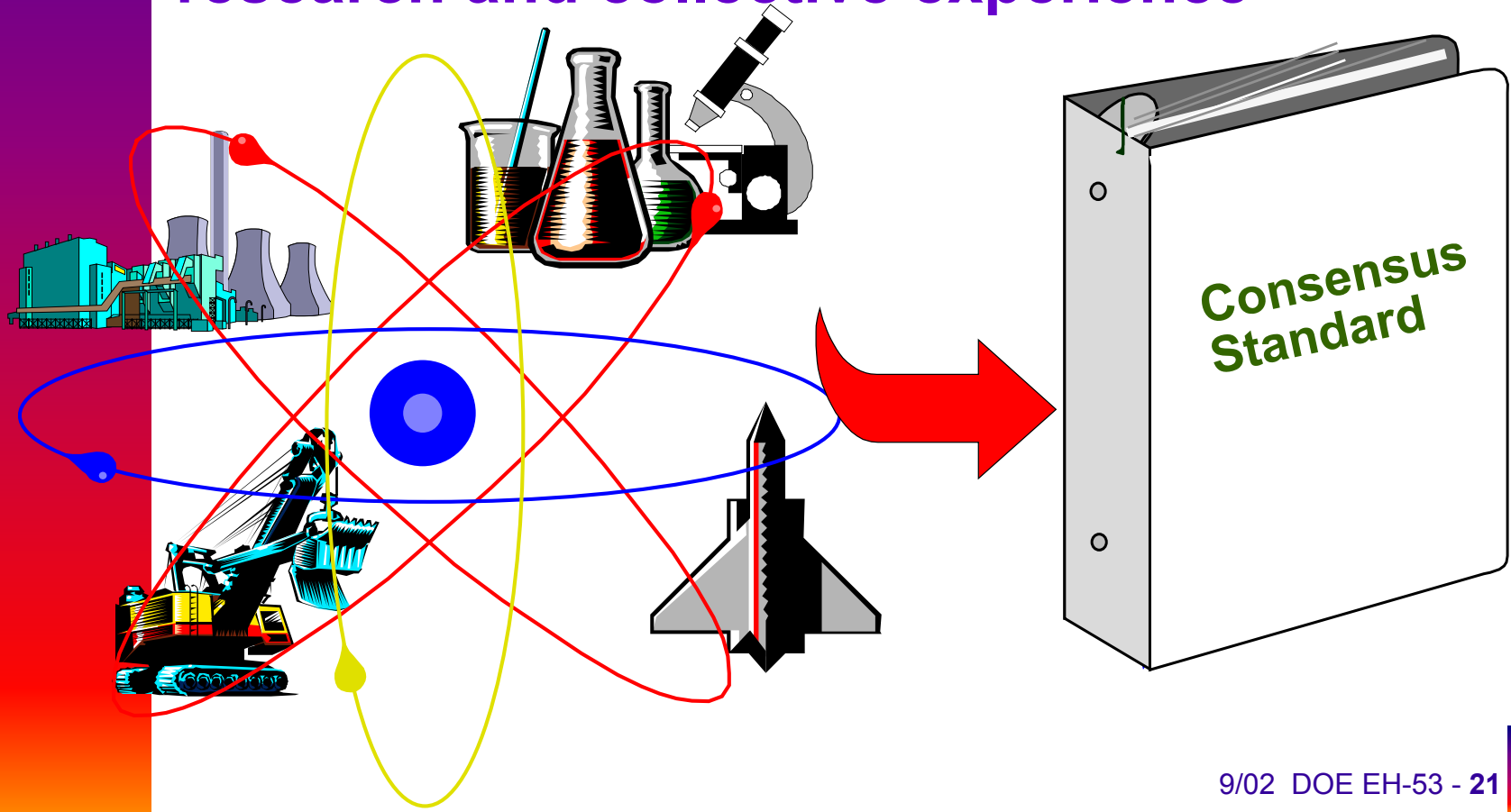
- **Voluntary Consensus Standards (Non-Government Standards)**
- **Consortia Standards**
- **Government**
- **Department**

Voluntary Consensus Standards (VCSs)

- Those standards that are established by international/national consensus bodies and technical/professional societies
- Also referred to as “non-Government standards” (NGSs) or “commercial standards”
- Do not include professional standards of personal conduct, or private standards of individual firms, or of individual organizations for their internal use

Voluntary Consensus Standards

Proven solutions to problems based on research and collective experience



DOE Uses Voluntary Consensus Standards...

- Directly in acquisition documents: Federal Acquisition Regulations (FARs)
- As references in other documents
- As design or reference documents
- By excerpting direct language (with proper referencing)

American Nuclear Society

*evaluation of radionuclide
transport in ground water for
nuclear power sites*

an American National Standard



*published by the
American Nuclear society
555 North Kensington Avenue
LaGrange Park, Illinois 60525 USA's*

Adopting Voluntary Consensus Standards

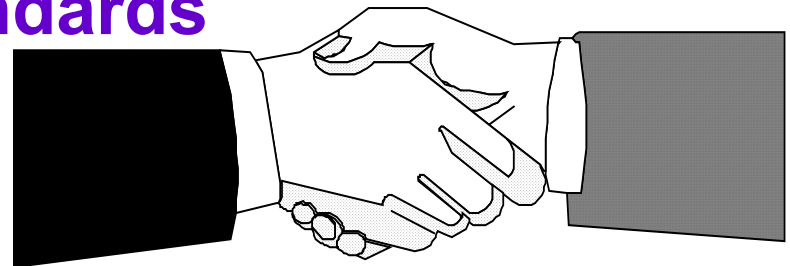
- Adoption: an “expression of acceptance... for use by DOE”
- VCSs referenced in DOE directives, contracts, sets of “work smart” standards, standards/requirements identification documents (S/RIDs), and approved safety analysis reports are considered to be adopted
- Continuing DOE participation in and review of adopted VCSs is required

Participating in Non-Government Standards Development Organizations (SDOs)

- **Public Law 104-113 and OMB Circular A-119 provide explicit guidance on participation.**
- **DOE Order 252.1 implements this guidance for DOE and provides for recording and reporting participations.**
- **Participations are reported annually to OMB.**

Why Non-Government Standards Development Organizations Want DOE Participation

- Provide balance of interest to standards bodies (i.e., government representing user interests)
- Guarantee sales of standards
- "Prestige" of DOE usage promotes acceptance and provides greater "legitimacy" to standards



Why Have a Technical Standards Program?

- PL 104-113 and Federal policy/requirements in OMB Circular A-119
- Uniform internal technical standards development system for DOE Federal and contractor organizations
- Necessary infrastructure for Federal and Government-owned/contractor-operated (GOCO) facilities and programs

Why Have a Technical Standards Program?

- **Defense Nuclear Facilities Safety Board (DNFSB) 91-1 commitment**
- **Technology transfer**
- **Requirements reduction**
- **Reflect Federal and National standards programs**

How Does the Technical Standards Program Work?

- Driven by Federal requirements
- Implemented via DOE requirements
- Managed in accordance with *DOE Technical Standards Program Procedures (TSPPs)*

DOE Technical Standards Program Procedures

- DOE TSPP-1 *Technical Standards Program Responsibilities*
- DOE TSPP-2 *Establishing the Need for a Technical Standard*
- DOE TSPP-3 *Use of Non-Government Standards and Interaction with Non-Government Standards Bodies*
- DOE TSPP-4 *Registering a Technical Standard Project*
- DOE TSPP-5 *Development of a New DOE Technical Standard*

DOE Technical Standards Program Procedures (cont.)

- DOE TSPP-6 *Coordination of DOE Technical Standards*
- DOE TSPP-7 *DOE Technical Standards Comment Resolution*
- DOE TSPP-8 *Approving and Issuing DOE Technical Standards*
- DOE TSPP-9 *Maintenance of DOE Technical Standards*
- DOE TSPP-10 *Conversion of DOE Technical Standards to Non-Government Standards*
- DOE TSPP-11 *Technical Standards Program Topical Committees*

How Does the Technical Standards Program Work?

- Program conducted by
 - ☞ Technical Standards Program Manager
 - ☞ Technical Standards Program Office
 - ☞ Technical Standards Managers (TSMs)
 - ☞ Technical Standards Managers' Committee (TSMC)
 - ☞ Topical Committees (TCs)

Technical Standards Manager

- **Each HQ, Field Office, and major site contractor is represented by a TSM who**
 - ☞ Acts as a single point-of-contact for resource information
 - ☞ Works with the organizations to develop and maintain technical standards
 - ☞ Coordinates proposed technical standards and consolidates comments

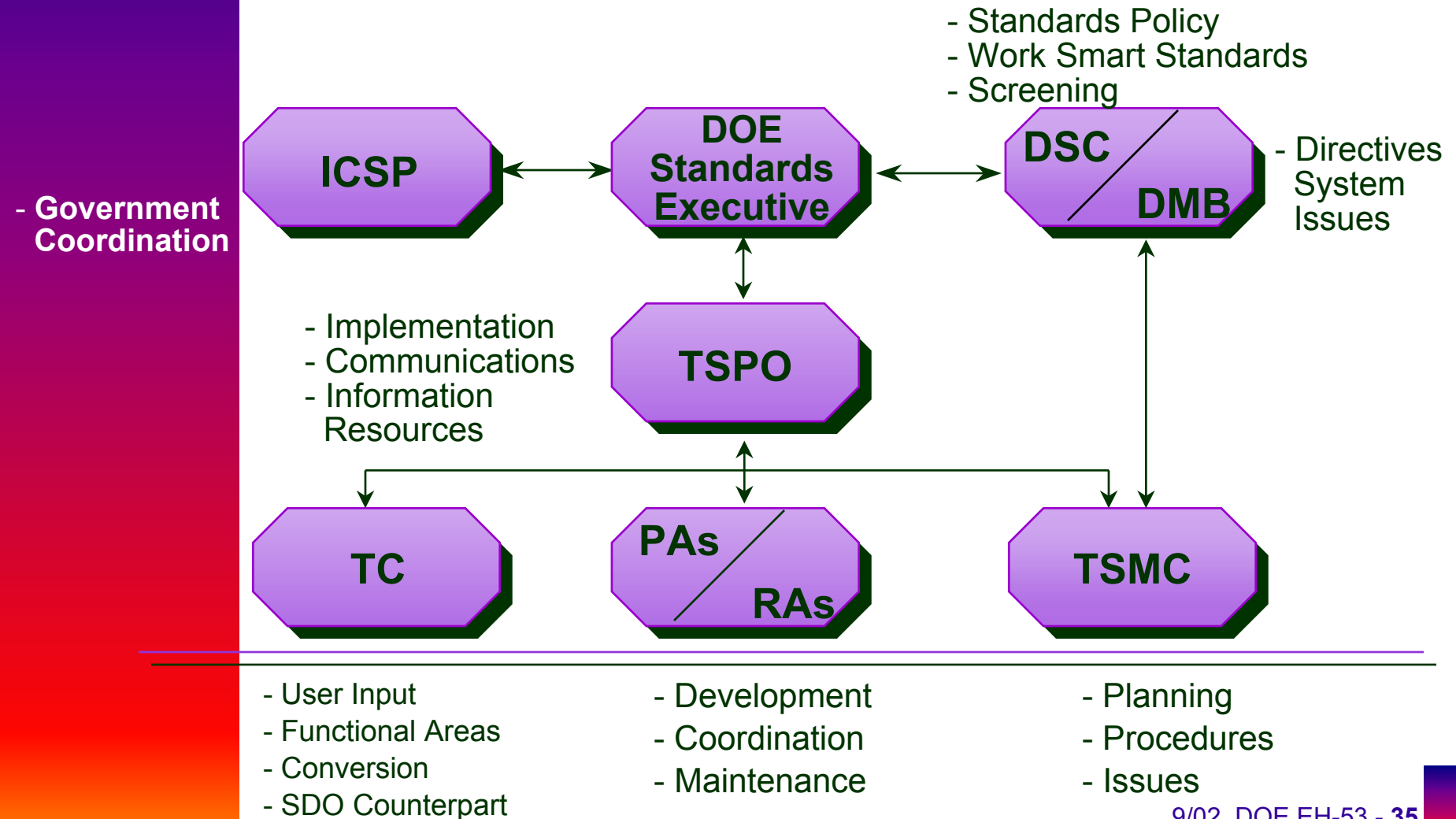
Technical Standards Managers' Committee

- Provides a forum for discussing and resolving issues related to technical standards
- Develops processes and procedures for conducting DOE Technical Standards activities
- Provides assistance to DOE and contractor organizations during their development, review, and approval of proposed DOE Technical Standards

How Does the Technical Standards Program Work?

- **Topical Committee Chairs & Steering Committees**
 - ☞ Focus for DOE's subject matter experts
 - ☞ Coordinate with SDO counterparts
 - ☞ Survive “rightsizing” and reorganization
- **Routine program interfaces**
 - ☞ Web site
 - ☞ E-mail distribution

Technical Standards Program Interfaces



Selecting of Technical Standards

- Voluntary Consensus Standards
- Government Standards

- DOE Standards (STD)
- DOE Specifications (SPEC)
- DOE Limited Standards and Specifications

DOE Technical Information

- DOE Handbooks (HDBK)
- DOE Technical Standards Lists (TSL)

DOE Resource Information

DOE General Information

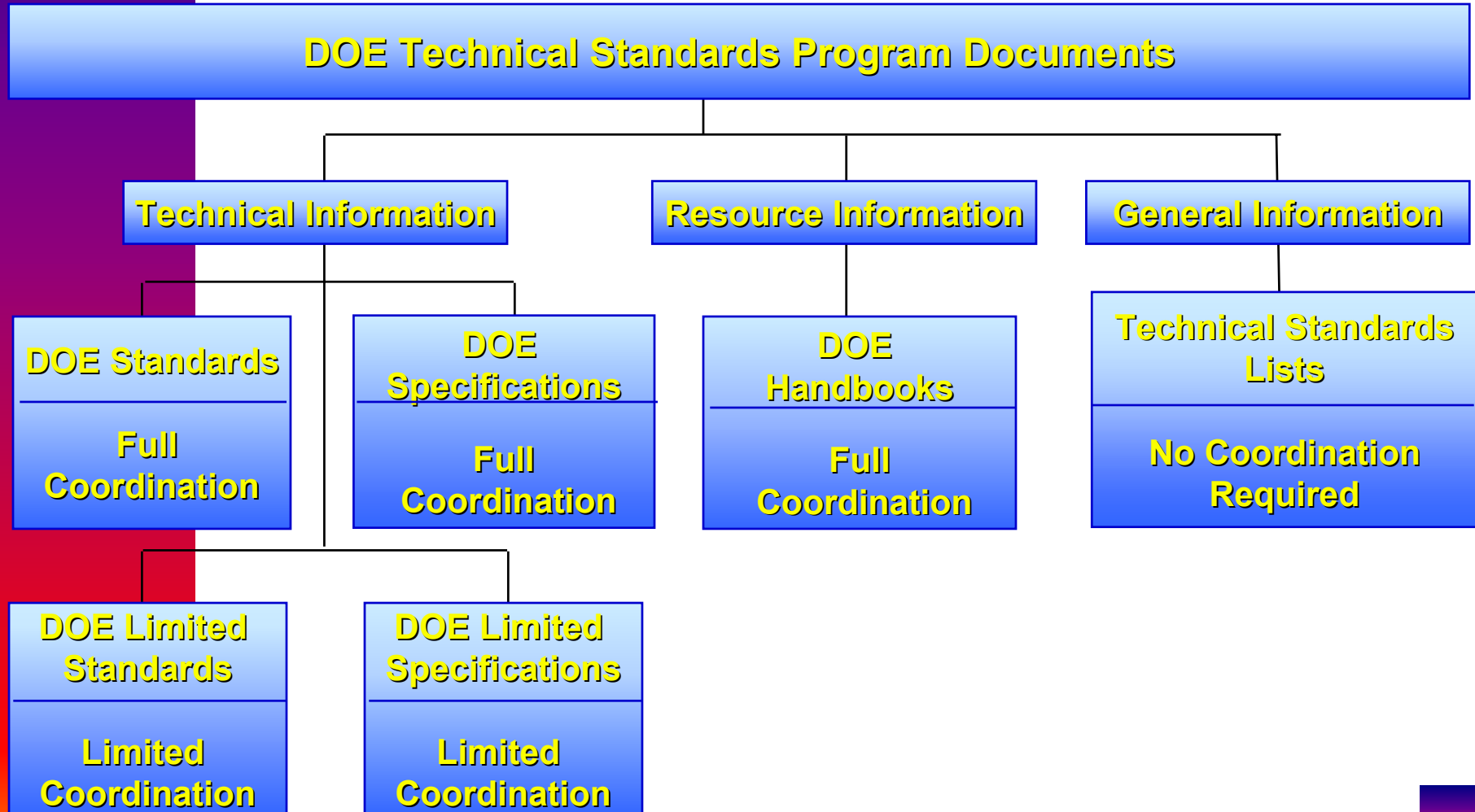
Information in DOE Technical Standards

- TSP guidance on the outline/sections for DOE Technical Standards is consistent with:
 - ➡ General Services Agreement (GSA)-Federal Supply Services (FSS) Federal Property Management Regulation (FPMR) 101-29 for Federal standardization documents
 - ➡ MIL-STD-961 and MIL-STD-962 for military standardization documents
 - ➡ American National Standards Institute (ANSI) *Style Manual for Preparation of Proposed American National Standards*
 - ➡ ANSI/Standards Engineering Society (SES) *Recommended Practice for Standards Designation and Organization*

Assignment of Standards Project Numbers by TSPO

- Assignment of project number indicates project initiation
- TSPO publishes information from the registration form in the "Standards Actions" newsletter to advise users of...
 - ☞ proposed new documents
 - ☞ documents in coordination
 - ☞ updates to existing documents
 - ☞ approved documents

Coordination of DOE Technical Standards Program Documents



Coordinate DOE Technical Standards with Industry, When Appropriate

IEEE

ASME

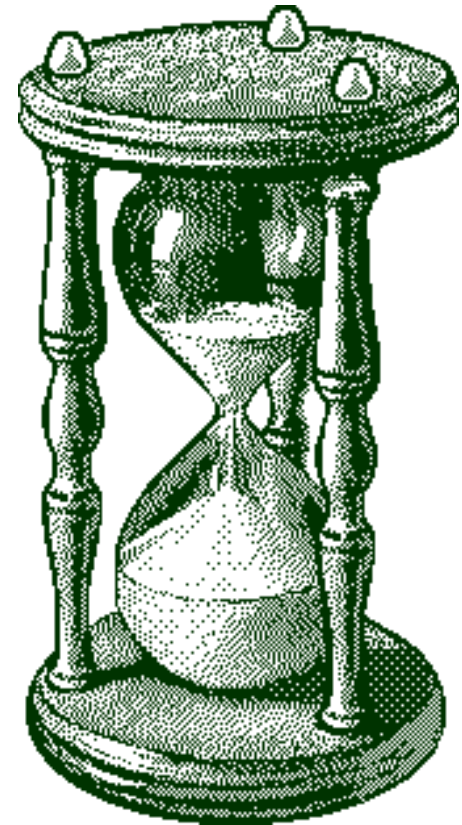
ASTM

ANSI

ANS

Normal Coordination Time

- 60 days
- May be extended to accept late comments
- May be reduced under urgent conditions



Monitoring Technical Standards Projects

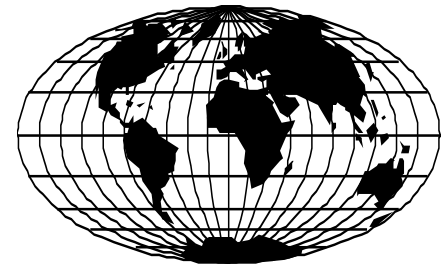
- TSM and TSPO must see all coordination drafts
- TSM and TSPO monitor to ensure timely completion

Options for Maintaining DOE Technical Standards

- Revision
- Change Notice
- Reaffirmation
- Reaffirmation with Errata
- Inactive for New Design
- Cancellation
- Reinstatement

Worldwide Access to DOE Technical Standards Program Information

- DOE Technical Standards, *DOE Technical Standards Program Procedures*, *DOE Standards Index*, and *Directory of DOE/Contractor Personnel Involved in Non-Government Standards Activities* (PDF file)
- Listing of Technical Standards Managers
- *The Standards Forum* and *Standards Actions*
- Links to DOE Topical Committees and non-Government standards development organizations
- Web address: <http://tis.eh.doe.gov/techstds/>



What Does the Technical Standards Program Do?

- Promotes the DOE use of voluntary consensus standards
- Assists DOE staff access to voluntary consensus standards (lists, summaries, copies)
- Provides standards management processes and serves DOE business needs

What Does the DOE Technical Standards Program Do?

- **Posts approved and draft-for-comment DOE Technical Standards**
- **Recognizes Topical Committees & provides informational links to them**
- **Promotes technology transfer**

Technical Standards Program Business Areas

- Policy and Program Development
- Technical Services
- Communications and Outreach

Policy and Program Development

- **Public Law 104-113**
- **OMB Circular A-119**
- **DOE Order & Guide 252.1**
- **TSP Strategic Plan & Program Plan**
- **TSP Procedures**

Technical Services

- Technical Standards Program Web site information
- TSMC meetings
- Topical Committee meetings
- Program tutorials
- Management briefings

Technical Services

- *Standards Actions*
- *The Standards Forum*
- Technical Standards Lists
- Internet access to DOE Technical Standards (approved and draft)
- Feedback

Technical Services

- Standards Developing Organizations links
- Topical Committee links
- DOE Standards Executive function (OMB Circular A-119 requirement)

Communications and Outreach

- **Interagency Committee on Standards Policy (ICSP)**
- **DOE Technical Standards Program Web site/links to SDOs**
- **ANSI Government Member Council/Nuclear Standards Board**
- **DOE Technical Standards Program Workshops**
- **Industry/Government Conference Participation**
- **DOE/Nuclear Regulatory Commission (NRC)/SDO Coordination Meetings**

Summary

- The Technical Standards Program promotes the use of voluntary consensus standards within DOE.
- The TSP provides the means for DOE to internally develop needed technical standards.
- DOE benefits from using technical standards.
- The DOE Technical Standards Program links DOE to the world of standards.

What the TSP Can Do For You

- Provide standards information
- Post your standards on the Internet
- Increase your management's awareness of standards
- Provide pre-established guidance and electronic formats
- Identify personnel in non-Government standards development organizations for assistance

What You Can Do For the TSP

- Register participation in voluntary consensus standards activities
- Contact your Technical Standards Manager
- Register “standards” products
- Keep informed through *Standards Actions* and *The Standards Forum*
- Learn more about standards by attending a Technical Standards Program workshop
- Query the DOE Technical Standards Program Web site
- Let us know how we can better support you and your organization

DOE Technical Standards Can Be Obtained from ES&H Technical Information Services (TIS)

- Call (800) 473-4375 to order copies of DOE Technical Standards.
- Local printing of the PDF files of the documents on the DOE TSP Web site is the recommended method for obtaining copies. (<http://tis.eh.doe.gov/techstds/>)

ES&H TIS

***ES&H Technical Information Services
EH-72/270 Corporate Center Building
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-0270***

Federal & Military Standardization Documents Are Available from...

Defense Printing Service Detachment Office

ATTN: Customer Service

700 Robbins Avenue, Bldg. 4D

Philadelphia, PA 19111-5094

First time orders: call (215) 697-2179

**Ordering information can also be obtained
from the Internet address:**

<http://www.dodssp.daps.mil/>



Voluntary Consensus Standards Are Available from...



**If you need copies of
voluntary consensus
standards, contact the SDO
and get them for yourself,
or go to your library and
get them through CD-ROM
or microfiche.**

**Most voluntary consensus standards may be obtained
from the American National Standards Institute,
25 West 43rd St., New York, NY 10036
212-642-4900, <http://web.ansi.org/>**